ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Setting & Firmware writing	1) Connect the unit to a suitable DC power supply. 2) Turn the DC source switch on after connecting a PC and FPU cable to the radio. → "P.G." appears on LED display 3) Write the firmware to radio. After the end of firmware writing. → Red (TX) LED lights up							
2. Write test frequency	1) Connect the unit to a suitable DC power supply. 2) Turn the DC source switch on after connecting a PC and FPU cable to the radio. → "E1" appears on LED display 3) Write the test and shipping frequency to the radio. → Green (BUSY) LED lights up 4) End of test frequency writing.							
3. Setting	1) Connect the unit to a suitable DC power supply. 2) Turn the power switch on after connecting a PC and FPU cable to the radio. 3) Start up the program for the adjustment.							
4. RX PLL lock voltage	1) RX VCO A high CH : 11 **K** CH : 10 **K2,K3,E**	DVM	TX-RX (A/2)	RX-CV	RX VCO (A3)	TC350	1.50V	±0.1V
	2) RX VCO A low CH : 10 **K** CH : 1 **K2,K3,E**						Check	8V or less
	3) RX VCO B high CH : 3 **K,K2** CH : 11 **K3,E**				RX VCO (A3)	TC351	1.50V	±0.1V
	4) RX VCO B low CH : 5 **K** CH : 6 **K2,K3,E**						Check	8V or less
5. TX PLL lock voltage	1) TX VCO high CH : 3			TX-CV	TX VCO (A2)	TC350 **K,K2,E** TC351 **K3**	1.50V	±0.1V
	2) TX VCO low CH : 1						Check	8V or less
6. RX frequency	1) Connect the frequency counter to CN3, then measure the frequency CH : 2	f. counter		CN3			PC adj. Test CH–44.85MHz	50Hz or less
Note : RX frequency means the local frequency of the RX VCO. So its frequency is wanted frequency minus the IF frequency.								
7. Setting	1) Remove 8 pin cable and the coaxial cable from CN16, and CN19 on TX-RX side.							
8. TX frequency	1) Connect the frequency counter to CN19, then measure the frequency CH : 2	f. counter	TX-RX (A/2)	CN19			PC adj.	50Hz or less
9. Setting	1) Insert 8 pin cable and the coaxial cable to CN16, and CN19 on TX-RX side.							
10. Maximum power limitting	1) Measure the RF power at TX ANT. High CH	Power meter	Rear	TX ANT	Final	VR1	Adjust the RF power to 43W.	±1W
13. TX RF high power	1) Measure the RF power at TX ANT. Low CH 2) Center CH 3) High CH						PC adj. 40W (Shipping power)	±1W

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
12. TX RF low power	1) Measure the power level at TX ANT. Low CH 2) Center CH 3) High CH	Power meter	Rear	TX ANT			PC adj. 25W (Shipping power)	±1W
13. BPF	1) Connect the TG to RX ANT, then connect CN1 to the spectrum analyzer input. Spectrum analyzer setting Span : 50MHz Scale : 10dB to 5dB div Tracking generator setting Output : –30dBm	Tracking generator Spectrum analyzer	Rear TX-RX (A/2)	RX ANT CN1	TX-RX (A/2)	L2 L4 L5	Center the frequency you are using, then adjust it to look like the wave Fig. 1. (Page 48)	
14. MCF (Wide)	1) Connect the TG to CN2, then connect CN4 to the spectrum analyzer input. CH : 2 (Wide) Spectrum analyzer setting Span : 50kHz to 25kHz Scale : 10dB to 2dB div Center freq' : 44.850MHz Tracking generator setting Output : –30dBm			CN2 CN4		L14 L17 L18	Adjust it to look like the wave Fig. 2. (Page 48)	
(Narrow)	2) CH : 2 (Narrow)					L15 L16 L19	Adjust it to look like the wave Fig. 3. (Page 48)	
15. Discriminator	1) Connect the SSG to RX ANT. CH : 2 (Wide) SSG output : –53dBm/501µV SSG MOD : 1kHz SSG DEV : 3kHz AF : 2V/4Ω	SSG AF VM Distortion meter	Rear	RX ANT TEST/SPKR jack SPO (pin 12)		L24	Adjust the distortion to minimum.	
16. Threshold squelch (Wide)	1) Connect SSG to RX ANT. CH : 2 (Wide) SSG output : 3dB below to 12dB SINAD level SSG MOD : 1kHz SSG DEV : 3kHz AF : 2V/4Ω	SSG Audio analyzer VTVM Oscilloscope	Rear	RX ANT TEST/SPKR jack SPO (pin 12)			PC adj. Adjust to point of opening squelch	
	2) SSG : OFF						Check	Squelch must be closed.
(Narrow)	3) CH : 2 (Narrow) SSG output : 3dB below to 12dB SINAD level SSG MOD : 1kHz SSG DEV : 1.5kHz AF : 2V/4Ω						PC adj. Adjust to point of opening squelch	
	4) SSG : OFF						Check	Squelch must be closed.

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ADJUSTMENT

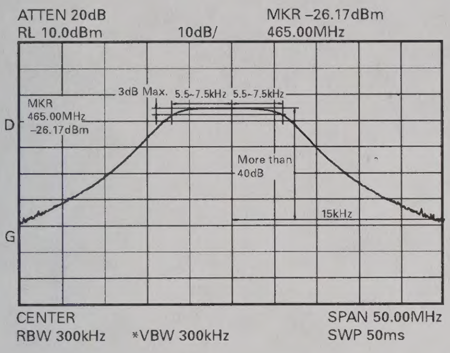

Fig. 1

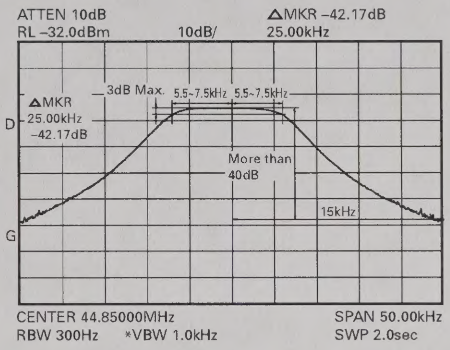

Fig. 2

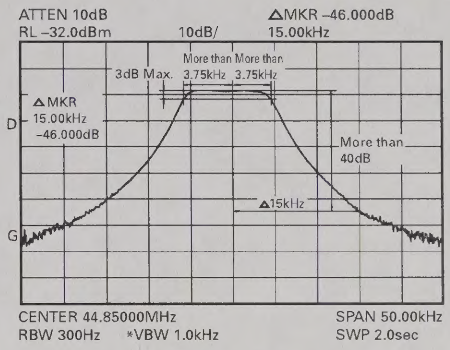

Fig. 3

Adjustment Points